Detailed resource utilization data were collected for all patients from 8 countries (U.S.,Australia,Canada,Germany,Italy,Spain,UK and France; n = 3373 prasugrel, n = 3332 clopidogrel). Hospitalization costs were estimated from the perspective of the German health care system on the basis of diagnosis-related groups (DRGs) for Germany and in-hospital complications. Costs for cardiovascular medications were estimated using public price per tablet (clopidogrel = €2.68/day; prasugrel = €2.94/day). Life expectancy (LE) was estimated based on in-trial cardiovascular and bleeding events, using statistical models developed from a similar population from the Saskatchewan Health Database. Costs in added years of life were not included in the base case. The analysis was carried out for the overall cohort and the 10 mg. recommended population of patients with no history of stroke/TIA, age < 75 and body wt. >=60kg. **RESULTS:** Over a median 14.5 month follow-up period, average total costs were €15/patient (€20/patient for the 10 mg. recommended population) lower with prasugrel, due to a lower rate of rehospitalization involving PCI. Prasugrel was associated with LE gains of 0.102 years (0.129 for the 10 mg. recommended population), due primarily to the decreased rate of non-fatal MI. Compared to clopidogrel, prasugrel was thus an economically dominant treatment strategy. When compared to generic clopidogrel at a cost of = €1.80/day, there was an incremental net cost with prasugrel of €281/patient (€285/patient for the 10 mg. recommended population), and an ICER of €2743/life year gained (€2213/life year gained for the 10 mg. recommended population). **CONCLUSIONS:** For ACS patients with planned PCI, prasugrel for up to 15 months compared with current standard of care is an economically attractive treatment strategy.

PCV88

THE COST EFFECTIVENESS OF AMBRISENTAN FOR THE TREATMENT OF PULMONARY ARTERIAL HYPERTENSION IN IRELAND

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OBJECTIVES: Ambrisentan, a non-sulphonamide endothelin receptor antagonist (ERA) was recently licensed for the treatment of Pulmonary Arterial Hypertension (PAH). The study objective was to estimate the cost-effectiveness of ambrisentan from an Irish Healthcare perspective. **METHODS:** A discrete event simulation model developed by United BioSource Corporation was used to compare the cost-effectiveness of ambrisentan relative to two other ERAs (bosentan, sitaxentan) over a five year time horizon. The probability of clinical worsening and liver abnormality events were predicted from regression equations derived from the ambrisentan clinical trials data. These regression equations were also used to predict events for the comparator therapies by calibrating them to reproduce treatment effects consistent with those reported in the literature. Costs and utilities were then assigned to these events and were discounted at 3.5%. Costs were obtained from Irish specific and UK sources and were in 2007 prices. Utility values were derived from ambrisentan clinical trials. **RESULTS:** It was estimated that ambrisentan is cost saving with improved health outcomes compared to both bosentan and sitaxentan; ambrisentan dominated both bosentan (–€195,788/QALY) and sitaxentan (–€138,780/QALY). This result was driven by the higher incidence of liver abnormalities associated with bosentan and sitaxentan compared to ambrisentan. When patients experienced liver abnormalities a proportion of them switched to prostacylin therapy, which was more expensive and associated with lower QALYs than ERA therapy. Probabilistic sensitivity analysis revealed that the likelihood of ambrisentan dominating bosentan and sitaxentan was 86% and 73%, respectively. **CONCLUSIONS:** Ambrisentan is a cost-effective alternative for the treatment of PAH in Ireland. This is because it results in a lower incidence of liver abnormalities compared to existing ERAs.

PCV89

PRASUGREL COST-EFFECTIVE RELATIVE TO CLOPIDOGREL IN PATIENTS WITH ACUTE CORONARY SYNDROME UNDERGOING PERCUTANEOUS CORONARY INTERVENTION FROM THE PERSPECTIVE OF THE UK NATIONAL HEALTH SERVICE? A MODEL-BASED ANALYSIS

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OBJECTIVES: In patients with acute coronary syndromes (ACS) undergoing percutaneous coronary intervention (PCI), the TRITON-TIMI 38 trial (TTT) demonstrated that treatment with prasugrel vs. clopidogrel significantly reduced rates of atherothrombotic events, though with increased risk of bleeding. We evaluated the long-term cost-effectiveness of this approach in patients free of stroke or TIA, from the perspective of the UK National Health Service. **METHODS:** A Markov model was developed based on risk equations for cardiovascular death, myocardial infarction (MI) or stroke, bleeding, and rehospitalisation, derived from TTT (N = 13,608 patients). Hospital readmissions captured during the trial in all patients from 8 countries (N = 6,705) were assigned to UK diagnosis related groups. After 12 months, common rehospitalisation costs were modelled to accrue over the life-time time horizon. **RESULTS:** During the first year incremental drug cost of prasugrel (+£162/patient) was partially offset by hospital cost savings (–£14/patient) due principally to reduced revascularization rates. Over the longer-term, prasugrel was associated with higher total costs resulting from rehospitalisations among survivors, of +£169/patient, with life expectancy gains of 0.06 years primarily due to reduced rate of MI, and 0.05 additional QALYs. Incremental cost per life year gained and per QALY gained were £2,606 and £3435 respectively. These results were consistent across subgroups, with incremental costs per QALY gained of £4494 in UA/NSTEMI, £2167 in STEMI, and £3461 in patients without any of three risk factors for bleeding (prior TIA/stroke, weight < 60kg, age ≥ 75 years). **Probabilistic sensitivity analysis indicated a 72% probability** of prasugrel being cost-effective compared with branded clopidogrel at a willingness to pay of £20,000 per QALY. **CONCLUSIONS:** Prasugrel treatment to 1 year in ACS-PCI patients appears cost-effective compared with branded clopidogrel.

PCV90

PATIENTS ADMITTED TO THE ICU AFTER CARDIOPULMONARY RESUSCITATION: AN ANALYSIS OF OUTCOME, QUALITY OF LIFE AND COST-EFFECTIVENESS

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OBJECTIVES: Literature shows that patients admitted to the intensive care unit (ICU) after cardiopulmonary resuscitation (CPR) have a worse clinical and economic outcome in terms of increased length of stay (LOS) in the ICU and a high mortality. In this study we investigated survival, health-related quality of life (HRQOL), costs and cost-effectiveness of patients admitted to the ICU after CPR. **METHODS:** A prospective observational cohort analysis was performed. In the period of March 3–November 3, 2008, all consecutive patients admitted to the ICU after CPR necessitating mechanical ventilation were screened for inclusion. All data concerning demography, comorbidity, severity of disease, organ failure, ICU and hospital LOS were analyzed. Data concerning costs were restricted to hospital-related costs and further to direct costs. HRQOL before admission and 3 months after ICU-discharge was assessed using standardized questionnaires (EuroQoL 5D, Short Form-36 scores). Statistical significance was attained at $P < 0.05$. **RESULTS:** Out of 39 patients admitted because of CPR, 35 patients (66% males) with a mean age of 62 years (SD 14.6) and APACHE II-score of 26.9 (SD 9) were included. Mortality was 57%. The 15 patients that survived had an equal HRQOL before and after ICU-discharge concerning pain ($P = 0.6$), general health ($P = 0.2$), vitality ($P = 0.1$), role-emotional ($P = 0.1$) and mental health ($P = 0.9$). HRQOL was diminished on physical functioning ($P = 0.01$), role-physical ($P = 0.007$) and social functioning ($P = 0.02$). Costs per hospital survivor were €92,139, and €6,399/quality adjusted life year (QALY). A sensitivity-analysis confirmed the cost-effectiveness of ICU treatment after CPR. **CONCLUSIONS:** Mortality after CPR was high and comparable with data from literature. After three months, HRQOL was only worse when looking at physical level. Treatment after CPR necessitating mechanical ventilation was found to be a cost-effective intervention.

PCV91

COST-EFFECTIVENESS ANALYSIS OF ENOXAPARIN AS ADJUNCTIVE THERAPY WITH FIBRINOLYSIS IN SPANISH PATIENTS WITH ST-ELEVATION MYOCARDIAL INFARCTION (STEMI): RESULTS FROM EXTRACT-TIMI 25

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OBJECTIVES: ExTRACT-TIMI 25 is a prospective randomized trial of 20,479 patients with 1,279 recruited in Spain. The use of enoxaparin as adjunctive therapy for fibrinolysis in patients with ST-segment elevation myocardial infarction versus unfractionated heparin (UFH) resulted in a 17% relative risk reduction of death or non-fatal myocardial infarction (MI). Using results from the ExTRACT-TIMI 25 trial we conducted an economic evaluation to estimate the cost-effectiveness of enoxaparin in Spain. **METHODS:** Cost-effectiveness analysis was performed from the Spanish National Health Service perspective. Health resource data were obtained from the ExTRACT-TIMI 25 trial, coding according to Diagnostic Related Groups (DRGs). Medical direct costs data (procedures and drugs) were obtained from published Spanish literature. Survival and life expectancy were estimated from the Framingham Heart Study. Results are presented as incremental cost per life year gained (LYG) and cost per Quality Adjusted Life Years (QALY). To prove the robustness of the results we calculated 95% confidence intervals for both costs and results. Long-term costs were discounted at 3% annually after the first year. **RESULTS:** Considering short-term treatment results (30 days), enoxaparin achieved better results with more LYG than UFH but there was a not significant difference in total costs. The incremental cost-effectiveness ratio for enoxaparin obtained from the 30 days analysis was €977.5/LYG. When long-term (lifelong) analysis was performed the cost obtained was of €2755.6/LYG and €3442.3/QALY. **CONCLUSIONS:** Considering the usual "willingness to pay" cost-effectiveness threshold in Spain (€30,000 per LYG and per QALY) enoxaparin administered as **adjunctive therapy for fibrinolysis in ST-elevation myo**cardial infarction patients is a potentially cost-effective strategy compared with UFH in Spain.

PCV92

COST-EFFECTIVENESS OF AN EXERCISE TRAINING PROGRAM IN HEART FAILURE

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OBJECTIVES: Exercise training is an effective strategy to reduce combined clinical outcomes in heart failure (HF). Nonetheless, implementation of such programs has been restricted to university and specialized centers. Economic analysis of this

intervention may help reinforce health policy worldwide. **METHODS:** Using a Markov model, we performed a cost-effectiveness analysis to estimate the costs, health gains, and incremental cost-effectiveness (international dollars [I$] per quality-adjusted life year [QALY] gained) of an exercise training program in HF class II and III NYHA patients, comparing with standard treatment, assuming a public system perspective in Brazil. QALYs were estimated from an outpatient cohort of 318 patients. Treatment efficacy was obtained from controlled trials and meta-analysis; treatment costs were derived from published data and National Health System reimbursement rates in 2008. Exercise training costs were obtained from a cardiac rehabilitation center. Robusteness of results was tested by Monte Carlo simulation and sensitivity analysis. **RESULTS:** Considering a 35% reduction of mortality with exercise training and an annual cost of I$ 1,176 per patient, this strategy had a total cumulative cost of I$ 25,856 and 4.95 QALYs. Comparing with standard treatment, which had a total cost of I$ 16,758 and 4.34 QALYs, the incremental cost per QALY of exercise training was I$ 14,965. Results were sensitive to intervention-related costs and effect size. Considering the results of the HF-ACTION trial, in a time-limited exercise program with a 11% combined event (all-cause mortality or hospitalization) reduction and an exercise cost of I$ 470 per patient, incremental cost-effectiveness ratio would be I$ 19,828/QALY. **CONCLUSIONS:** Under several assumptions, exercise training appeared to be cost-effective, and to offer good value for money compared to other well-accepted HF treatment strategies. The results support implementing such intervention as part of public health efforts to improve HF management.

PCV93

COST-EFFECTIVENESS ANALYSIS OF EZETIMIBE/SIMVASTATIN COMPARED WITH DOUBLING THE STATIN DOSE: ANALYSIS OF THE INFORCE STUDY IN THE UK

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OBJECTIVES: In the INFORCE study, treatment with ezetimibe/simvastatin (Eze/Simva) 10/40 mg/day was superior to doubling the statin dose in reducing total cholesterol (TC) among inpatients with suspected coronary events already receiving a statin (stratified into 3 potency strata at baseline). The purpose of this analysis was to evaluate the cost-effectiveness of Eze/Simva in this population by translating reductions in the observed TC: high-density lipoprotein cholesterol ratio into projected lifetime costs and benefits. **METHODS:** A Markov model (Cook et al 2004) was used to project lifetime costs and benefits based on patients' cardiovascular risk factor profiles and actual lipid values at baseline and endpoint (12 weeks). Inputs for cardiovascular event costs and age-specific utilities for health states were based on a 2006 National Institute of Health and Clinical Excellence submission for Eze and age-specific non–CHD mortality rates (2006) derived from UK Office of National Statistics mortality data. **RESULTS:** At baseline, the Eze/Simva group (N = 195) had a higher mean [SD] TC (4.33 [0.89] mmol/L) than the double-statin group (N = 189; 4.16 [0.80] mmol/L). In the pooled-data analysis adjusted for baseline profile, Eze/Simva conferred 0.218 discounted (3.5%) incremental quality-adjusted life year (QALY) at a discounted (3.5%) incremental cost of £2,524, for an Incremental Cost-Effectiveness Ratio (ICER) of £11,571/QALY. Similar data were observed in each stratum of statin LDL-C–lowering potency, with ICER values <£15,000/QALY for each comparison of Eze/Simva to statins: Eze/Simva was cost-effective in the low-potency (£13,552/QALY), medium-potency (£11,930/QALY), and high-potency (£10,148/QALY) statin strata in adjusted analyses. On bootstrapping analysis, the ICER for Eze/Simva therapy was <£20,000/QALY in 99% of replicates for the adjusted analysis. **CONCLUSIONS:** Among UK inpatients evaluated for coronary events, switching to Eze/Simva 10/40 mg is projected to be a cost-effective treatment alternative (vs doubling the statin dose) based on a commonly applied UK ICER threshold (<£20,000–£30,000).

PCV94

THE COST-EFFECTIVENESS OF TITRATION TO GOAL WITH BRAND ROSUVASTATIN COMPARED TO GENERIC SIMVASTATIN IN PATIENTS WITH ELEVATED LOW-DENSITY LIPOPROTEIN CHOLESTEROL: PRIMARY AND SECONDARY PREVENTION IN THE BELGIAN HEALTH CARE SETTING

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OBJECTIVES: Statin dose escalation to reach low-density lipoprotein cholesterol (LDL-C) goals is an established practice. This study analyzes the health economic impact of titrating patients to a target LDL-C of 100 mg/dl as recommended by current guidelines. First-line brand rosuvastatin and first-line generic simvastatin protocols are compared. **METHODS:** A published state-transition model was used, linking age, smoking status, systolic blood pressure, and total cholesterol (TC) to fatal CVD risk using the Belgian SCORE (primary prevention) and Framingham (secondary prevention) equations. Non-fatal risk was based on landmark prevention trials. Patient LDL-C levels (mean/SD, before/after treatment start) were based on the STELLAR trial for simvastatin 20/40/80 mg and rosuvastatin 10/20/40 mg. Hence, consistent with the STELLAR trial a baseline LDL-C value (mg/dl) of (mean +/– SD) 189 +/– 19 was applied. Other patient data were based on the DISCOVERY-BELUX trial that included Belgian patients. Resource use and unit costs were based on literature and official reimbursement tariffs. Patient groups starting on either rosuvastatin (10 mg) or simvastatin (20 mg) were compared. Patients not reaching LDL-C target were switched to the next higher dose of the same statin. Simvastatin 80 mg patients not reaching target were switched to 20 mg and if needed 40 mg of rosuvastatin. Cost-effectiveness results were reported as EUR 2009 (direct medical costs from a public payer perspective) per Life Year gained (LYg) for a time horizon of 20 years. **RESULTS:** EUR/LYg values of 56,481 and 43,884 were found for respectively primary and secondary settings, well below some of the ICER values reported for other health care interventions attracting public reimbursement. Model explorations indicated that cost-effectiveness improved for lower LDL-C targets and higher baseline patient LDL-C levels. **CONCLUSIONS:** Exclusive titration by rosuvastatin compared to starting patients first on simvastatin, is likely to be cost-effective in patients with elevated LDL-C levels both in primary and secondary prevention.

PCV95

COST-EFFECTIVENESS OF CLOPIDOGREL IN ACUTE CORONARY SYNDROMES IN SOUTH KOREA

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OBJECTIVES: This study aims to verify the economic feasibility of clopidogrel+aspirin combination therapy by comparing the reduction in ischemic heart disease development, and corresponding costs of aspirin monotherapy and clopidogrel+aspirin combination therapy (CT) in Korean acute coronary syndrome (ACS) patients. **METHODS:** We conducted a cost-effectiveness analysis of 3-years clopidogrel+aspirin CT in ACS patients from a social perspective, taking into account all direct medical costs, direct non-medical costs, and indirect costs that occur during the course of clopidogrel+aspirin CT and compared this to aspirin monotherapy. The effect of clopidogrel addition was applied, based on data from the Clopidogrel in Unstable angina to prevent Recurrent ischemic Events (CURE) study. The transition probability of Markov model was estimated using health insurance claim data and records in the Korean Cause of Death Registry for the years 2001–2003. **RESULTS:** The long-term Markov model analysis revealed that the effect of clopidogrel+aspirin CT compared with aspirin monotherapy in ACS patients was 0.207 life-years gained (LYG) and that the incremental cost-effectiveness ratio analyzed as incremental costs per LYG was US$ 5,154.07. In addition, sensitivity analysis demonstrated that the relative risk and discount rate for cardiovascular events (acute myocardial infarction, stroke and cardiovascular death) were the variables that mainly affected the study results. **CONCLUSIONS:** A 38-year follow-up study of the 3-years effect of clopidogrel+aspirin CT in Korea reveals that clopidogrel CT is a cost-effective alternative to aspirin monotherapy. Additionally, these results provide an economic justification for recommending clopidogrel CT in the treatment of ACS patients within the Korean context.

PCV96

COST-EFFECTIVENESS ANALYSIS OF IVABRADINE IN CHRONIC STABLE ANGINA PATIENTS IN A FINNISH SETTING

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OBJECTIVES: High resting heart rate (HR) has been progressively accepted as a modifiable cardiovascular risk factor. Ivabradine is a specific HR lowering agent indicated in chronic stable angina (SA) patients with normal sinus rhythm, contraindicated or intolerant to beta-blockers. This study aimed to estimate the cost-effectiveness of ivabradine versus generic amlodipine in such patients, from the Finnish societal perspective. **METHODS:** A Markov chain Monte Carlo stochastic simulation model was used to estimate the influence of HR lowering in cardiovascular morbidity and mortality and its economic consequences. Ivabradine, 7.5 mg twice a day, was compared against amlodipine, 10 mg once a day. HR distribution was modelled as a gamma function and survival and time to hospitalization were modelled with weibull functions. **Only patients with resting HR > 70 bpm were included. Events considered** were acute myocardial infarction, stroke, heart failure and death, as well as revascularization procedures (coronary artery bypass graft and percutaneous coronary interventions). Finnish setting was considered, including only direct costs, derived from the 2006 Finnish Guidelines for Healthcare Unit Costs. **Effectiveness was measured in life** years (LY) and quality-adjusted life years (QALY). Time horizon was set at 20 years and discount rate was 5%/year for costs and effectiveness. **RESULTS:** For each 100 patients using ivabradine in comparison with amlodipine we estimate a 36 LYs (95%CI: [18;57]) or 30 QALYs (95%CI: [17;47]) gain. Annual incremental cost per patient was €226 (95%CI: [201;243]). Incremental cost-effectiveness ratios for ivabradine utilization were €12,886/LY and €15,060/QALY. **For high levels of certainty** (>90%), willingness to pay for ivabradine's benefits didn't exceed €24,000, regardless of the effectiveness measure considered. **CONCLUSIONS:** Ivabradine is a cost-effective alternative for the treatment of SA **when compared to generic amlodipine** in a Finnish setting **of patients with contraindication or intolerance to beta-blockers** and resting HR > **70 bpm.**

PCV97

COST-EFFECTIVENESS OF IVABRADINE IN PATIENTS WITH CHRONIC STABLE ANGINA IN A DUTCH SETTING

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OBJECTIVES: High resting heart rate (HR) has been increasingly accepted as a modifiable cardiovascular risk-factor. Ivabradine has shown specific HR lowering properties and is indicated in chronic stable angina (SA) patients with normal sinus rhythm having a contraindication or intolerance for beta-blockers. The aim of this